

Changkat Changi Secondary School
Physics Department
Upper Secondary

Name: _____ () Class: _____ Date: _____

TOPIC 4 : Mass, Weight & Density (Chapter 4)

WORKSHEET 4.3

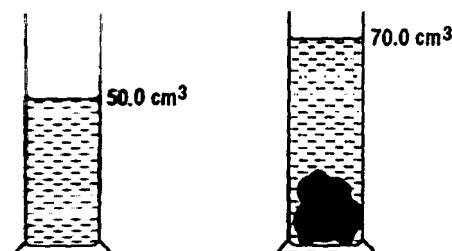
(A) MULTIPLE-CHOICE QUESTIONS (5 marks)

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1. A piece of metal has a mass of 140 g. When it was put into a measuring cylinder containing water, the water level rose as shown in the diagram.

What is the density of the metal?

- A** 0.14 g/cm³
B 0.50 g/cm³
C 2.0 g/cm³
D 7.0 g/cm³



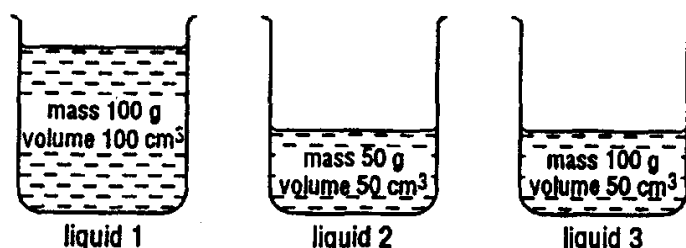
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2. A stone of mass 400 g is lowered into a measuring cylinder containing water. The water level rises from 300 cm³ to 500 cm³. What is the density of the stone?

- A** 0.50 g/cm³ **B** 0.80 g/cm³ **C** 1.33 g/cm³ **D** 2.0 g/cm³

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3. Three liquids are poured into beakers as shown.



Which statement about the densities of the liquids is correct?

- A** Liquid 1 has twice the density of liquid 3.
B Liquid 3 has twice the density of liquid 2.
C The liquids all have different densities.
D The liquids all have the same density.

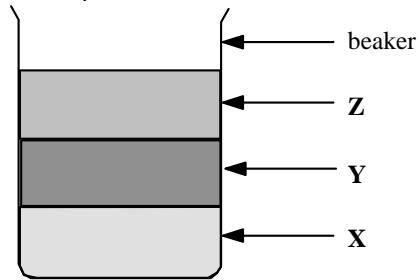
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4. Which block is made of the densest material?

Block	mass /g	length /cm	breadth /cm	height /cm
A	360	8	4	2
B	480	5	5	4
C	600	4	4	5
D	800	9	4	3

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5. The diagram shows three liquids X, Y, Z, which do not mix, in a beaker. One of them is mercury, another paraffin oil and the third brine.



Starting from the top the liquids will be, in order,

- A** oil, water, mercury **B** water, mercury, oil
C mercury, oil, water **D** mercury, water, oil

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(B) STRUCTURED QUESTIONS (10 marks)

6. 360 g of a liquid A of density 1.20 g/cm^3 were mixed with 100 g of liquid B of density 1.00 g/cm^3 .
 Showing your working, calculate:

(i) the volume, and (2 marks)

(ii) the density, of the mixture. (2 marks)

7. A beaker can hold 250 cm^3 of liquid. When it is filled with paraffin (density 0.80 g/cm^3), the total weight is 2.6 N.
 Assuming $g = 10 \text{ N/kg}$,

(a) Calculate the mass of the filled beaker

(i) in kg. : (1 mark)

(ii) in g : (1 mark)

(b) Calculate the mass of paraffin in the beaker, (2 mark)

(c) Calculate the mass of the beaker. (2 mark)